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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,669	01/29/2001	Kimiyuki Hayasaki	862.C2094	7044

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[REDACTED] EXAMINER

NGUYEN, LAM S

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 02/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	HAYASAKI, KIMIYUKI
Examiner	Art Unit
LAM S NGUYEN	2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
2a) This action is FINAL. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-44 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
5) Claim(s) ____ is/are allowed.
6) Claim(s) 1-44 is/are rejected.
7) Claim(s) ____ is/are objected to.
8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____.
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

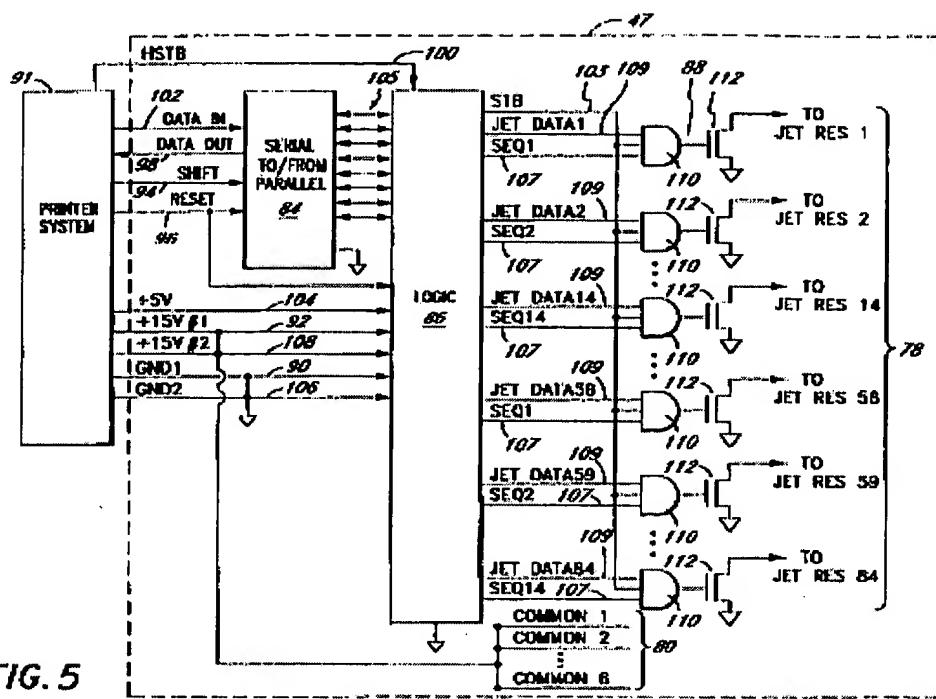
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1, 2, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 28, 29, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 43, and 44 rejected under 35 U.S.C. 103(a) as being unpatentable over Murray (U.S. 5646660) in view of Fearnside (U.S. 4455578)

Murray discloses a thermal inkjet printhead (FIG. 3), having:

a plurality of thermal printing elements for printing (Fig. 3, element 74 and element 72)
a block selection circuit (FIG. 5, element 86) outputs a selection signal for selecting a block comprising a plurality of printing elements to be simultaneously driven (FIG. 3, signal SEQ1 drives printing elements 1 and 58, for example)

a printing control circuit (FIG. 5, element 86) outputs a driving signal in correspondence with image data (FIG. 5, element JET DATA), together with the selection signal (FIG. 5, element SEQ), drives the printing elements through the drivers (FIG. 5, element 112)



The claimed invention differs from Murray in that it is silent with respect to having a decoder in the block selection circuit (FIG. 5, element 84). Moreover, Murray does not disclose an input portion that receives an external image data and block selection data in a bus format.

However, Fearnside discloses an apparatus, having:

an output unit (in term of "DATA SOURCE") (FIG. 4, element 18) that outputs the image data (FIG. 4, element 10) and block selection data (FIG. 4, element 4) in a bus format of a plurality of consecutive bits

an input portion receives continuously an external image data (FIG. 4, element 10) and block selection data or data associated with a printing element driving timing (in term of "decoder") (FIG. 4, element 4) in a bus format of a plurality of bits (column 2, line 3-9). The image data is inputted to the printing control circuit (FIG. 4, element 24). The block selection data is inputted to the block selection circuit that comprises a decoder (in term of "SUB ARRAY

SELECT DECODER) (FIG. 4, element 20)

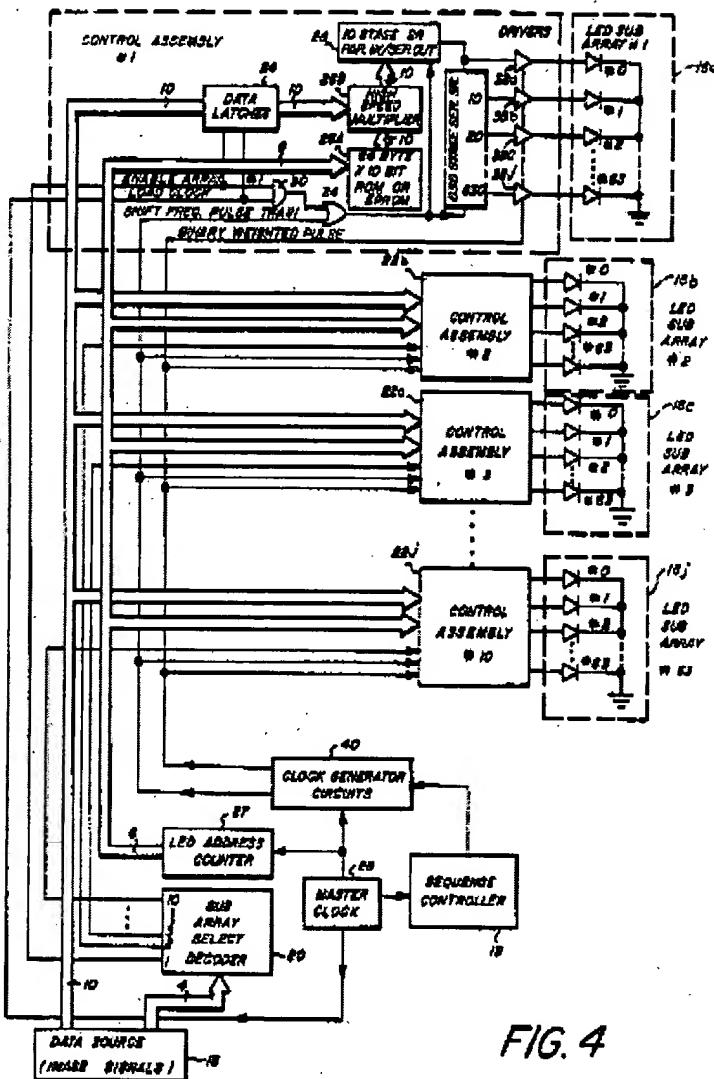


FIG. 4

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the decoder as designed by Fearnside into the logic box of Murray (FIG. 5, element 86), because this decoder insures the generation of the block selection signals in time division. In addition, the motivation of the substitution of the serial

transmitting and receiving the image data as designed by Murray by the parallel transmitting and receiving the image data in a bus format as taught by Fearnside would benefit from not using the serial-to-parallel converter as in the printhead of Murray (FIG. 5, element 84).

2. Claims 3, 9, 24, 27, and 34 rejected under 35 U.S.C. 103(a) as being unpatentable over Murray (U.S. 5646660) in view of Fearnside (U.S. 4455578).

Murray and Fearnside disclose the claimed invention as discussed above as regarded to claims 1, 7, 22, 25, and 32 except: While the input portion is adapted to receive data in units of 4 bits, the input portion as designed by Fearnside is adapted to receive the image data in units of 10 bits (column 2, line 16). However, the familiarity between the teachings of Fearnside and the claimed invention is the correspondence of each control block (in the design of Fearnside, a control block is a control assembly box (FIG. 4, element 22a-j). In the claimed invention, a control block is a latch in a column of latches in the printing control circuit (FIG. 1, element 8)) to a bit in the image data. Thus, the reason for using a different number of bits to form the image data is designed merely to relate the data to the different number of blocks used in the printing control circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute 10-bit image data of Fearnside (column 2, line 16) by 4-bit image data to form an image data corresponding to the desired number of blocks included in the printing control circuit of a printhead.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lam Nguyen whose telephone number is (703) 305-3342. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow, can be reached on (703) 308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722. Any inquiry or general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

LN

January 28, 2002



John Barlow
Supervisory Patent Examiner
Technology Center 2800